

Claims

- [c1] A method of controlling an automotive vehicle and a trailer comprising:
determining a presence of a trailer; and
applying brake-steer to the vehicle in response to the trailer to enhance control of the trailer relative to the vehicle.
- [c2] A method as recited in claim 1 further comprising generating a reverse direction signal of the vehicle and applying brake-steer in response to the reverse direction signal.
- [c3] A method as recited in claim 2 wherein generating a reverse direction signal comprises generating a reverse direction signal from a shift lever.
- [c4] A method as recited in claim 2 wherein generating a reverse direction signal comprises generating a reverse direction from a push button.
- [c5] A method as recited in claim 2 wherein generating a reverse direction signal comprises generating a reverse direction from a transmission controller.

- [c6] A method as recited in claim 2 wherein generating a reverse direction signal comprises generating a reverse direction from a wheel speed sensor relative to a first wheel.
- [c7] A method as recited in claim 1 wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.
- [c8] A method as recited in claim 1 wherein applying brake-steer comprises applying an increased drive torque to a second wheel relative to a first wheel.
- [c9] A method as recited in claim 1 wherein applying brake-steer comprises applying a trailer brake and a vehicle brake.
- [c10] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with a hitch sensor.
- [c11] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with a reverse aid sensor.
- [c12] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with an ultrasonic sensor.

- [c13] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with a camera.
- [c14] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with a harness current.
- [c15] A method as recited in claim 1 wherein determining a presence of a trailer comprises determining the presence of a trailer with a manually activated mechanism.
- [c16] A method as recited in claim 1 wherein applying brake-steer to the vehicle in response to the trailer to enhance control of the trailer relative to the vehicle comprises applying brake-steer to reduce the turning radius of the vehicle.
- [c17] A method of controlling an automotive vehicle and a trailer comprising:
 - determining a presence of a trailer; and
 - applying at least one trailer brake and at least one vehicle brake to brake-steer the vehicle and trailer in response to the presence of the trailer to enhance control of the trailer relative to the vehicle.
- [c18] A method as recited in claim 17 further comprising gen-

erating a reverse direction signal of the vehicle and applying brake-steer in response to the reverse direction signal.

[c19] A method as recited in claim 18 wherein generating a reverse direction signal comprises generating a reverse direction signal from a shift lever.

[c20] A method as recited in claim 18 wherein generating a reverse direction signal comprises generating a reverse direction from a push button.

[c21] A method as recited in claim 18 wherein generating a reverse direction signal comprises generating a reverse direction from a transmission controller.

[c22] A method as recited in claim 18 wherein generating a reverse direction signal comprises generating a reverse direction from a wheel speed sensor relative to a first wheel.

[c23] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with a hitch sensor.

[c24] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with a reverse aid sensor.

- [c25] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with an ultrasonic sensor.
- [c26] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with a camera.
- [c27] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with a harness current.
- [c28] A method as recited in claim 17 wherein determining a presence of a trailer comprises determining the presence of a trailer with a manually activated mechanism.
- [c29] A method as recited in claim 17 further comprising determining a position of the trailer and applying at least one trailer brake and at least one vehicle brake in response to the position.
- [c30] A method as recited in claim 17 wherein applying brake-steer to the vehicle in response to the trailer to enhance control of the trailer relative to the vehicle comprises applying brake-steer to reduce the turning radius of the vehicle.
- [c31] A control system for an automotive vehicle and a trailer

having a brake comprising:

means to determining the presence of a trailer;

a controller coupled to the means, said controller programmed to apply brake-steer to the vehicle and the trailer brakes to reduce the turning radius of the vehicle and trailer.

[c32] A system as recited in claim 31 wherein said means to determine the presence of a trailer comprises a hitch sensor.

[c33] A system as recited in claim 31 wherein said means to determine the presence of a trailer comprises a reverse aid sensor.

[c34] A system as recited in claim 31 wherein said means to determine the presence of a trailer comprises an ultrasonic sensor.

[c35] A system as recited in claim 31 wherein said means to determine the presence of a trailer comprises a camera.

[c36] A system as recited in claim 31 wherein said controller is programmed to apply brake-steer by applying a first brake and a second brake to reduce the turning radius of the vehicle.

[c37] A system as recited in claim 31 wherein said controller is

programmed to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius.

[c38] A system as recited in claim 31 wherein said controller is programmed to brake-steer by applying an increased drive torque to a second wheel relative to the first wheel.

[c39] A system as recited in claim 31 further comprising a steering wheel angle sensor generating a steering wheel angle signal, said controller programmed to apply brake-steer in response to the reverse directional signal and the steering wheel angle signal.

[c40] A system as recited in claim 31 further comprising a yaw rate sensor generating a yaw rate signal, said controller programmed to apply brake-steer in response to the reverse direction signal and yaw rate signal.

[c41] A system as recited in claim 31 further comprising a steering wheel torque sensor generating a steering torque signal, said controller programmed to apply brake-steer in response to the reverse direction signal and steering torque signal.

[c42] A system as recited in claim 31 further comprising a steering wheel angle sensor generating a steering wheel angle signal and a vehicle velocity sensor generating a

vehicle velocity signal, said controller programmed to apply brake-steer in response to the reverse direction signal and steering wheel angle and vehicle velocity signal.

[c43] A system as recited in claim 31 further comprising means to determine a trailer position, said controller programmed to apply brake-steer in response to the trailer position.